

Research Note 83-27

BATTLEFIELD REALISM: THE IMPACT OF OPPOSING FORCE (OPFOR)
ON FRIENDLY FORCE TASK PERFORMANCE WITH IMPLICATIONS FOR
THE NATIONAL TRAINING CENTER

VOLUME I

DISCUSSIONS AND FINDINGS

William L. Warnick
Human Resources Research Organization

Norman D. Smith
Army Research Institute

ARI FIELD UNIT AT FORT HOOD, TEXAS



U. S. Army

Research Institute for the Behavioral and Social Sciences

February 1981

Approved for public release; distribution unlimited.

83 06 15 025

ADA 129038

DTIC FILE COPY

DTIC
ELECTE
JUN 20 1983
S A D

Unclassified

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER Research Note 83-27	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) Battlefield Realism: The Impact of Opposing Force (OPFOR) on Friendly Force Task Performance with Implications for the National Training Center. Vol I. Discussion and Findings		5. TYPE OF REPORT & PERIOD COVERED
7. AUTHOR(s) William L. Warnick (HumRRO), Norman D. Smith (ARI)		6. PERFORMING ORG. REPORT NUMBER FR-MTRD(TX)-81-11
9. PERFORMING ORGANIZATION NAME AND ADDRESS Human Resources Research Organization 300 North Washington Street Alexandria, Virginia 22314		8. CONTRACT OR GRANT NUMBER(s) MDA903-79-C-0191
11. CONTROLLING OFFICE NAME AND ADDRESS US Army Research Institute for the Behavioral and Social Sciences, 5001 Eisenhower Avenue Alexandria, Virginia 22333		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS 2Q263743A794
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office) ARI Field Unit-Fort Hood HQ TCATA, PERI-SH Fort Hood, Texas 76544		12. REPORT DATE February 1981
		13. NUMBER OF PAGES 51
		15. SECURITY CLASS. (of this report) Unclassified
16. DISTRIBUTION STATEMENT (of this Report) Approved for public release; distribution unlimited		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		
18. SUPPLEMENTARY NOTES		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) Tanks RED THRUST Field Training Exercises Tactics Threat (Soviet) Training program development Armor Job performance OPFOR Training Training objectives Opposing Force (OPFOR) Training Program ARMVAL OPFOR		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) The main objective of the research was to determine if any US job tasks needed to be modified or changed as a result of the manner in which the OPFOR (Threat) operated. It was reasoned that new training objectives specifically designed to counter the OPFOR would be needed only in those job areas where job behavior resulting from past training was ineffective in dealing with the OPFOR (Threat). Two field exercises were selected for study in which well-trained OPFOR groups employing realistic Soviet doctrine and tactics participated. Structured inter- (CONT'D)		

DD FORM 1 JAN 73 1473

EDITION OF 1 NOV 65 IS OBSOLETE

Unclassified

1 SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

Unclassified

SECURITY CLASSIFICATION OF THIS PAGE(When Data Entered)

Block 20. Abstract

views and questionnaires were developed and interviews with participants were conducted. Some of the major findings were: (a) US Forces must learn to do their tasks faster and with fewer errors; there are no second chances, (b) significant changes in job content were not required, but improvement of existing skills are, (c) intensive and repetitive training against OPFOR tactics is the only way to be prepared, (d) Home Station Training (HST) will play a major role in preparing units to beat the OPFOR. Without a realistic OPFOR in HST, US units may find the National Training Center a painful experience. y

Unclassified

SECURITY CLASSIFICATION OF THIS PAGE(When Data Entered)

The primary mission of the Fort Hood Field Unit of the US Army Research Institute for the Behavioral and Social Sciences (ARI) is to conduct research in support of the Army human factors and training objectives. Research by the field unit emphasizes evaluations conducted by TO&E units in operational field environments.

At present, the Army Training and Evaluation Programs (ARTEPs) drive the training and evaluation of US Army units. However, current ARTEPs have no criteria for judging troop and leader knowledges and skills in countering opposing forces. With the National Training Center (NTC) soon to become a reality, it is imperative that training managers have a means for developing programs and evaluating units' capabilities to counter potential threats.

ARI research programs in this area is conducted both as in-house efforts, and as joint efforts with organizations possessing unique capabilities for human factors research. The research described in this report was conducted by personnel of the Human Resources Research Organization (HumRRO), under Contract No. MDA903-79-C-0191. It is responsive to the objectives of RDTE Project 2Q263743A794, "Human Performance in Field Assessment," FY 1981 Work Program.

Credit and appreciation are due Dr. Albert L. Kubala and Mr. Stephen S. Essig for editorial work on the report and aid in analyzing the data.

1. ☐ **Accession For**
 2. ☐ **THIS GRAB**
 3. ☐ **FILE TAB**
 4. ☐ **Unrecorded**
 5. ☐ **first**
 6. ☐ **second**
 7. ☐ **third**
 8. ☐ **fourth**
 9. ☐ **fifth**
 10. ☐ **sixth**
 11. ☐ **seventh**
 12. ☐ **eighth**
 13. ☐ **ninth**
 14. ☐ **tenth**
 15. ☐ **eleventh**
 16. ☐ **twelfth**
 17. ☐ **thirteenth**
 18. ☐ **fourteenth**
 19. ☐ **fifteenth**
 20. ☐ **sixteenth**
 21. ☐ **seventeenth**
 22. ☐ **eighteenth**
 23. ☐ **nineteenth**
 24. ☐ **twentieth**
 25. ☐ **twenty-first**
 26. ☐ **twenty-second**
 27. ☐ **twenty-third**
 28. ☐ **twenty-fourth**
 29. ☐ **twenty-fifth**
 30. ☐ **twenty-sixth**
 31. ☐ **twenty-seventh**
 32. ☐ **twenty-eighth**
 33. ☐ **twenty-ninth**
 34. ☐ **thirtieth**
 35. ☐ **thirty-first**
 36. ☐ **thirty-second**
 37. ☐ **thirty-third**
 38. ☐ **thirty-fourth**
 39. ☐ **thirty-fifth**
 40. ☐ **thirty-sixth**
 41. ☐ **thirty-seventh**
 42. ☐ **thirty-eighth**
 43. ☐ **thirty-ninth**
 44. ☐ **fortieth**
 45. ☐ **forty-first**
 46. ☐ **forty-second**
 47. ☐ **forty-third**
 48. ☐ **forty-fourth**
 49. ☐ **forty-fifth**
 50. ☐ **forty-sixth**
 51. ☐ **forty-seventh**
 52. ☐ **forty-eighth**
 53. ☐ **forty-ninth**
 54. ☐ **fiftieth**
 55. ☐ **fifty-first**
 56. ☐ **fifty-second**
 57. ☐ **fifty-third**
 58. ☐ **fifty-fourth**
 59. ☐ **fifty-fifth**
 60. ☐ **fifty-sixth**
 61. ☐ **fifty-seventh**
 62. ☐ **fifty-eighth**
 63. ☐ **fifty-ninth**
 64. ☐ **sixtieth**
 65. ☐ **sixty-first**
 66. ☐ **sixty-second**
 67. ☐ **sixty-third**
 68. ☐ **sixty-fourth**
 69. ☐ **sixty-fifth**
 70. ☐ **sixty-sixth**
 71. ☐ **sixty-seventh**
 72. ☐ **sixty-eighth**
 73. ☐ **sixty-ninth**
 74. ☐ **seventieth**
 75. ☐ **seventy-first**
 76. ☐ **seventy-second**
 77. ☐ **seventy-third**
 78. ☐ **seventy-fourth**
 79. ☐ **seventy-fifth**
 80. ☐ **seventy-sixth**
 81. ☐ **seventy-seventh**
 82. ☐ **seventy-eighth**
 83. ☐ **seventy-ninth**
 84. ☐ **eightieth**
 85. ☐ **eighty-first**
 86. ☐ **eighty-second**
 87. ☐ **eighty-third**
 88. ☐ **eighty-fourth**
 89. ☐ **eighty-fifth**
 90. ☐ **eighty-sixth**
 91. ☐ **eighty-seventh**
 92. ☐ **eighty-eighth**
 93. ☐ **eighty-ninth**
 94. ☐ **ninetieth**
 95. ☐ **ninety-first**
 96. ☐ **ninety-second**
 97. ☐ **ninety-third**
 98. ☐ **ninety-fourth**
 99. ☐ **ninety-fifth**
 100. ☐ **ninety-sixth**
 101. ☐ **ninety-seventh**
 102. ☐ **ninety-eighth**
 103. ☐ **ninety-ninth**
 104. ☐ **hundredth**
 105. ☐ **hundred-first**
 106. ☐ **hundred-second**
 107. ☐ **hundred-third**
 108. ☐ **hundred-fourth**
 109. ☐ **hundred-fifth**
 110. ☐ **hundred-sixth**
 111. ☐ **hundred-seventh**
 112. ☐ **hundred-eighth**
 113. ☐ **hundred-ninth**
 114. ☐ **hundred-tenth**
 115. ☐ **hundred-eleventh**
 116. ☐ **hundred-twelfth**
 117. ☐ **hundred-thirteenth**
 118. ☐ **hundred-fourteenth**
 119. ☐ **hundred-fifteenth**
 120. ☐ **hundred-sixteenth**
 121. ☐ **hundred-seventeenth**
 122. ☐ **hundred-eighteenth**
 123. ☐ **hundred-nineteenth**
 124. ☐ **hundred-twentieth**
 125. ☐ **hundred-twenty-first**
 126. ☐ **hundred-twenty-second**
 127. ☐ **hundred-twenty-third**
 128. ☐ **hundred-twenty-fourth**
 129. ☐ **hundred-twenty-fifth**
 130. ☐ **hundred-twenty-sixth**
 131. ☐ **hundred-twenty-seventh**
 132. ☐ **hundred-twenty-eighth**
 133. ☐ **hundred-twenty-ninth**
 134. ☐ **hundred-thirtieth**
 135. ☐ **hundred-thirty-first**
 136. ☐ **hundred-thirty-second**
 137. ☐ **hundred-thirty-third**
 138. ☐ **hundred-thirty-fourth**
 139. ☐ **hundred-thirty-fifth**
 140. ☐ **hundred-thirty-sixth**
 141. ☐ **hundred-thirty-seventh**
 142. ☐ **hundred-thirty-eighth**
 143. ☐ **hundred-thirty-ninth**
 144. ☐ **hundred-thirtieth**
 145. ☐ **hundred-thirty-first**
 146. ☐ **hundred-thirty-second**
 147. ☐ **hundred-thirty-third**
 148. ☐ **hundred-thirty-fourth**
 149. ☐ **hundred-thirty-fifth**
 150. ☐ **hundred-thirty-sixth**
 151. ☐ **hundred-thirty-seventh**
 152. ☐ **hundred-thirty-eighth**
 153. ☐ **hundred-thirty-ninth**
 154. ☐ **hundred-thirtieth**
 155. ☐ **hundred-thirty-first**
 156. ☐ **hundred-thirty-second**
 157. ☐ **hundred-thirty-third**
 158. ☐ **hundred-thirty-fourth**
 159. ☐ **hundred-thirty-fifth**
 160. ☐ **hundred-thirty-sixth**
 161. ☐ **hundred-thirty-seventh**
 162. ☐ **hundred-thirty-eighth**
 163. ☐ **hundred-thirty-ninth**
 164. ☐ **hundred-thirtieth**
 165. ☐ **hundred-thirty-first**
 166. ☐ **hundred-thirty-second**
 167. ☐ **hundred-thirty-third**
 168. ☐ **hundred-thirty-fourth**
 169. ☐ **hundred-thirty-f**

**BATTLEFIELD REALISM: THE IMPACT OF OPPOSING FORCE (OPFOR) ON
FRIENDLY FORCE TASK PERFORMANCE WITH IMPLICATIONS FOR THE
NATIONAL TRAINING CENTER.**

VOL. I. DISCUSSION AND FINDINGS

BRIEF:

Requirement:

The National Training Center (NTC) at Fort Irwin, California, is expected to become an operational reality in the very near future. The NTC will have a dedicated OPFOR unit that will not only employ OPFOR tactics, but will have equipment which is meant to simulate Soviet equipment. Therefore, US units preparing for an evaluation at the NTC must design their training to counter the OPFOR tactics. Although there is a great abundance of OPFOR-related information, training managers have not been provided with a means of sifting through this information to determine exactly what their units need in order to effectively counter an OPFOR.

A previous research effort (Warnick & Kubala, 1980) was designed to develop a procedure to assist training managers in developing counter OPFOR-related training objectives for their own units. This effort was sponsored by FORSCOM's Opposing Force Training Detachment, Red Thrust, located at Fort Hood, Texas. It focused on the ARTEP and MOS task listings as a basis for selecting OPFOR-related information for inclusion in training. The work met with modest success. However, it was felt that the procedure had shortcomings and that other techniques were still needed. Hence, alternative approaches were sought. This present effort observed and measured during field exercises the effects of well-trained OPFOR groups on US units for the purpose of potentially identifying counter OPFOR-related training objectives.

It seems reasonable to assume that the conduct of the evaluation exercises at the NTC will be similar to other exercises in which well-trained OPFOR groups were employed. Therefore, the findings from this research will also merit examination to determine what implications they may have on the management of the NTC.

Procedure:

It was reasoned that new training objectives specifically designed to counter the OPFOR would be needed only in those job areas where job behavior resulting from past training was ineffective in dealing with the Threat. Therefore, procedures were planned to determine what changes in job behavior were required of friendly force players during the course of the exercises.

Two field exercises were selected for study in which well-trained OPFOR groups employing realistic Soviet doctrine and tactics participated. Interviews with participants in the first exercise were conducted to determine how facing an OPFOR impacted on their job behavior. The information thus obtained provided the basis for developing structured interviews and questionnaires to be administered to participants in the second

exercise. The second exercise consisted of several iterations of three scenarios. As a result, participants in this latter exercise had the opportunity to learn and modify their behavior to better counter the OPFOR.

In addition to the questions on job behavior, questions were also included to determine: (a) the effects OPFOR training had on US forces portraying the OPFOR, and (b) how facing an OPFOR affected motivation for training.

The responses of the participants were analyzed and common themes were extracted. The possible implications of the findings for the NTC were assessed.

Findings:

The major findings were:

- (a) US forces must learn to do their tasks faster and with fewer errors; there are no second chances.
- (b) Significant changes in job content were not required, but improvements of existing skills are.
- (c) Even though the US Marine unit was judged well trained by its officers during the first weeks of the exercise, they were frequently beaten by the OPFOR. Intensive and repetitive training against OPFOR tactics is the only way to be prepared.
- (d) Home station training (HST) will play a major role in meeting the foregoing objective. Without a realistic OPFOR in HST, US units may find the NTC a painful experience.

While it did not appear that many new OPFOR-related training objectives were needed in preparing for the NTC, some ideas were reported consistently which have implications for doctrine, tactics, and training. The major notions in this respect were:

- (a) More complete planning for all major contingencies is required before the battle starts.
- (b) More rapid (preferably non-electronic) means of communication are needed.
- (c) "Hit and run" tactics can be effective due to the longer range of US weapons.
- (d) More training in the choice of defensive positions is needed and skylining must be avoided.
- (e) Initial engagements must be at or near the maximum range of our weapons.

- (f) Friendly forces must disengage by the time the OPFOR closes to within 1500 meters to prevent being overrun.
- (g) Use of mines, barriers, and craters would slow the OPFOR and permit friendly forces to fight more effectively.
- (h) Friendly forces need greater fire power to fight outnumbered.

In addition, it was the consensus of the players that the challenge provided by facing an OPFOR improved their skills, improved their motivation for training, and provided them with a better understanding of OPFOR doctrine and tactics.

Among the themes reported which had implications for the NTC were:

- (a) Learning OPFOR doctrine and tactics was not difficult, but maintaining formations at high closing speeds was difficult. It was suggested that a training area of at least 5 x 10 km was needed for practice.
- (b) Portraying the OPFOR became monotonous and took its toll in morale and motivation. (A similar problem might well occur at the NTC. Employing two OPFOR groups alternately with collateral training was suggested as a remedy.)
- (c) Estimates of training time required to fully develop required skills ranged from four to eight weeks. (The implication here is for home station training. Commanders cannot expect to prepare their units with only two or three FTXs.)
- (d) NTC management must resist pressures to "water down" the OPFOR to permit US units to "make a good showing." Maximum benefit from the NTC experience can be achieved only if the OPFOR is played as realistically as possible.

Utilization:

The research reported here is the first time that the direct effect of the OPFOR on US forces task performance and attitudes has been systematically assessed. Proponents for OPFOR in CATRADA and DA will find information directly applicable to their planning. US force commanders, entoto, should be forewarned by this study that their units are not prepared to do effective battle with an OPFOR unless they have trained against one before reaching the NTC.

CONTENTS

CHAPTER	PAGE
1 Introduction	1
2 Research Objectives	5
3 Method	8
Background	8
Exercise/Test Description	9
RED THRUST Exercise, 194th Armor Brigade	9
Advanced Antiarmor Vehicle Evaluation (ARMVAL)	10
Procedures	10
4 Impacts of OPFOR	13
Objective I--Impact of OPFOR on US Force Job Behavior	13
Objective II--Impact of OPFOR Training on US Forces	16
Objective III--Field Exercises as a Source of OPFOR-RELATED Training Objectives	21
Attitudinal and Motivational Effects on Friendly Forces	21
5 Lessons Learned: Implications For Doctrine, Tactics and Training	25
Doctrinal and Tactical Implications	25
Training Implications	27
6 Summary and Implications For the National Training Center	32
Impact of OPFOR Tactics on US Job Performance	32
Impact of Playing Role of OPFOR on US Soldiers	34
Training Implications For US Units Going Through the National Training Center	35
Training Implications For Personnel Portraying the OPFOR at the NTC	35
Training Implications For Home Station Training	36
Overall Requirements For an Effective OPFOR Training Program	37
Implications for Managing the NTC	37
ARMVAL Wrapup (Test Director's Experience, Insights, Thoughts)	39
Background	39
References	44

TABLES		Page
TABLE 3-1	Participants in Each Test Role by Military Organization	11
TABLE 4-1	Distribution of Responses to the Question: Did you discover any areas of your job which had to be modified or changed after maneuvering against a well-trained Threat Force?	14
TABLE 4-2	Distribution of Responses to the Question: Did you develop different methods or techniques to counter Threat tactics?	14
TABLE 4-3	Distribution of Responses to the Question: Did you perform your job differently during the three missions at ARMVAL than you did during your regular military training?	15
TABLE 4-4	Distribution of OPFOR Responses to the Statement: Threat training takes too much time away from regular training.	16
TABLE 4-5	Distribution of Responses to the Statement: Threat training would cause confusion when using friendly tactics.	17
TABLE 4-6	Distribution of OPFOR Responses to the Question: Did you benefit from having had Threat training?	18
TABLE 4-7	Distribution of OPFOR Responses to the Question: Would Threat training benefit every service member?	18
TABLE 4-8	Distribution of OPFOR Responses to the Item: If at sometime in the future you had to fight against a nation that used Threat tactics, check those statements you feel apply to you and the Threat training you received.	19
TABLE 4-9	Distribution of OPFOR Responses to the Question: How difficult was it to learn Threat tactics?	20
TABLE 4-10	Distribution of OPFOR Responses to the Question: Did you perform your job differently during the three missions at ARMVAL than you did during your regular military training?	20
TABLE 4-11	Distribution of US Force Responses to the Question: How would regular maneuvers against an OPFOR affect your interest in training?	22
TABLE 4-12	Distribution of US Force Responses to the Question: How would regular maneuvers against an OPFOR affect your US skills?	22
TABLE 4-13	Distribution of US Force Responses to the Question: Has maneuvering against a well-trained Threat unit helped you to understand Soviet tactics?	23
TABLE 4-14	Distribution of Responses to the Question: Did your experience with Threat tactics change your understanding of the strengths and weaknesses of the Soviet military?	23
TABLE 4-15	Distribution of Responses to the Question: Has your opinion of the Soviet military changed since you have experienced Threat tactics?	24

Chapter 1

INTRODUCTION

A major problem confronting Army training managers is the lack of specific OPFOR-related training objectives which can be used as a basis for integrating OPFOR into current training programs. When the Opposing Force (OPFOR) program came into existence, the Army downgraded in classification a tremendous amount of information concerning the Threat (USSR and North Korean). Little guidance was provided to the trainer on how to determine what specific OPFOR information is necessary to enhance the job performance of individuals within his unit. A pressing need for some type of information selection device was needed to aid the training manager in sorting out information relevant to his unit's mission. It appeared that a set of precise training objectives tailored to each job was required to ensure systematic and complete training in OPFOR-related subjects.

The request for ARI assistance was originally submitted by FORSCOM's Opposing Force Training Detachment, Red Thrust, located at Fort Hood, Texas. This Detachment came into being as a result of Army Regulation 350-2, Opposing Force (OPFOR) Program, and is charged with the responsibility for collecting and disseminating OPFOR information and advising units on the development of OPFOR training programs.

Initially, the research centered on the feasibility of using the Army Training and Evaluation Program (ARTEP) as a basis for developing OPFOR-related training objectives. Due to the large amount of Threat information available, the research approach focused on the ARTEP as a means for saving time over the more conventional method of conducting a task analysis. Upon investigation, it was found that the OPFOR scenario within the ARTEP does not provide enough detail about the OPFOR-related tasks to be performed by the US Forces. This is due to no fault on the part of the ARTEP--its intent is to provide a reasonable battle scenario to be fleshed out by the participating units. Since ARTEPs must take into account various geographical locations worldwide, its directions must apply universally. It does provide a general outline of the types of OPFOR tactical situations which are expected to be encountered. Without knowing the specific OPFOR tasks that had to be performed, it did not seem possible to derive OPFOR-related training objectives from the ARTEP scenarios.

It was also noted that the ARTEP covered only selected portions of a unit's total range of activities. The activities covered are primarily those leading to or comprising combat engagements. Not covered is a wide range of ancillary functions which must be accomplished for survival in a battle environment or when the unit is in the rear areas preparing for its next mission.

It appeared that little or no specific OPFOR-related knowledges or skills were required for successful completion of the typical ARTEP. However, it was obvious that certain kinds of OPFOR-related knowledges and skills are required on the battlefield. For example, target recognition and identification, knowledge of OPFOR combat formations, and knowledge of weapons capabilities all appear to be of paramount importance.

After determining that the ARTEP lacked sufficient breadth and detail, the research team modified its approach and began to look at job task lists to see if they could be used as a source for determining OPFOR-related knowledges and skills which would improve overall performance in any aspect of the soldier's job. A review of job task lists obtained from the US Army Armor and Infantry schools was conducted. Although the task lists were much more comprehensive than those that could be inferred from the ARTEP, they dealt with those aspects of a job (MOS) which were concerned with equipment and weapons. Except for those tasks dealing with target recognition and identification and weapons capabilities, few of the tasks appeared to require OPFOR-related knowledges and skills for their performance. It was hypothesized that this stemmed from the method in which most task lists are derived. The problem was recognized earlier by McCluskey, et al. in their attempt to derive lists of knowledges and skills common to eight combat MOS. They state:

During the time frame of this particular project, job incumbents who were either participating in a representative conflict or had had recent relevant experience were not available. In the systems engineering of training materials, job incumbents are typically surveyed to identify the tasks they actually perform and then training materials are developed to increase proficiency in these job tasks. In the current project, however, the actual job tasks are not being performed. Even though a job incumbent may have held the duty position of a rifleman, he was not performing the normal functions of a rifleman in combat. Therefore, asking the job incumbent which tasks he actually performs does not provide a completely accurate picture.¹

Therefore, it appears that the task lists will have to be expanded to take into account the tasks that a given job incumbent should be able to perform in combat, regardless of whether those tasks are presently performed. It was also suspected that many combat-related tasks requiring OPFOR-related information were missing from the available task lists. There still persisted a need for some type of information selection device, one in which US tasks could be identified, and the relevant OPFOR information located and matched to these US tasks. At the request of Red Thrust, a procedure was developed for analyzing Threat information and relating it to US job performance tasks.

Essentially, the procedure consisted of three steps: (a) selecting all the tasks from the lists having to do with job performance in a given area, (b) collecting all the OPFOR-related information available in the same area, and (c) determining which items of OPFOR information, if known by incumbents, would enhance performance in each of the tasks. The procedure was tried employing the area of nuclear, biological and chemical (NBC) warfare as the vehicle. Although some shortcomings were noted, the procedure appeared to work reasonably well. One interesting finding from applying the procedure

¹M. R. McCluskey, T. O. Jacobs, & F. K. Cleary. Systems engineering of training for eight combat MOSs (Technical Report 74-12). Alexandria, Virginia: Human Resources Research Organization, June 1974.

was that new US soldier tasks had to be derived. For example, a task titled "Recognizes and identifies contaminated area warning flags" was inferred. This task was inferred from the fact that the Warsaw Pact nations frequently emplace warning flags containing information on NBC hazards in an area. The flags are intended for use by their own troops. However, such information would obviously be of use to US forces considering entering the area if they recognized the flags and could interpret the information. Therefore, the new task was added to the list. The procedure was provided to Red Thrust and was used to assist their instructional personnel in developing a training seminar for OPFOR trainers. A more complete description of the procedure and the results of its application can be found in Warnick and Kubala.²

The research team also began to look for other alternative approaches for developing OPFOR-related training objectives. Ideally, the objectives should be derived from the practical experience of individuals who have actually engaged an opposing force with up-to-date equipment, but US forces have no such experience. However, some of our forces have conducted Field Training Exercises (FTXs) based on ARTEPs against highly trained units employing OPFOR doctrine and tactics. Unfortunately, such exercises have not been conducted regularly. Smith³ noted two major problems in integrating OPFOR concepts into ARTEPs. First, realistic OPFOR units were unavailable for maneuvers. Commanders almost universally complain that they have too little time and too few resources for training. They claim that dedicating a group to serve as an OPFOR unit would further strain resources and take time away from regular training activities.

The second reason is that commanders do not want to risk bad evaluations, and that may well be more important. Smith noted that:

...it is the firmly entrenched belief that the ARTEP is not just an evaluation/training program, but a test of the battalion and its commander, the outcome of which may weigh heavily on the officer's efficiency report and on his future as an officer.⁴

Consequently, commanders do not wish to face anything unfamiliar in the ARTEP and, therefore, strongly resist employment of realistic OPFOR tactics. Again, quoting from Smith concerning a unit that was trained as an OPFOR:

²W. L. Warnick & A. L. Kubala. Improvement of training realism for tactical units: Opposing Force (OPFOR) program (FR-MTRD(TX)-80-4). Alexandria, Virginia: Human Resources Research Organization, March 1980. (ARI Technical Report in progress.)

³N. D. Smith. State of the art: OPFOR and ARTEP implementation in the US Army (Research Problem Review 78-25). Alexandria, Virginia: US Army Research Institute for the Behavioral and Social Sciences, November 1978.

⁴Ibid., pp 12-13.

Some members of the OPFOR unit stated that the excellent type of training that they could have provided to the US units was negated because brigade and battalion commanders did not want their units to be faced with the results of a confrontation against OPFOR tactics and OPFOR organization--namely defeat.⁵

Hence, a realistic OPFOR was seldom used in ARTEPs. The OPFOR did cause problems when it was used; it highlighted weaknesses in our training due, in part, to insufficient time to actually train (the ARTEP often being the only time the battalion got together for an exercise), and to the ARTEP itself which was not designed to train US forces to fight an enemy with tactics different from our own. Nevertheless, the research team thought that such exercises were the most useful source of information available for identifying the types of behavior required for successful performance against a force employing Soviet doctrine and tactics. These behaviors could then be formatted into specific OPFOR-related training objectives. Additionally, US troops preparing for exercises at the National Training Center (NTC) will need OPFOR-related training objectives for their home station training preparation.

To meet that need, the ARI/HumRRO staff members began to look for FTXs or operational tests where a realistic OPFOR was being or had been used.⁶ It was assumed that contact with personnel who had participated in maneuvers against a well-trained OPFOR unit would provide a more indepth understanding of the kinds of performance which would be required of US forces in any possible future confrontation with Soviet forces. Efforts were then made to locate units who had recently been engaged or were planning such tactical field training.

The authors are fully aware of the reasoning behind the separation of the OPFOR and Threat concepts. There are inherent dangers in believing that a simulation of the Soviet armed force called OPFOR and the real thing are identical. This is a concern, however, which should plague any simulation. The US Marine Corps in their ARMVAL test chose not to draw too fine a point on the discrimination. Threat was the term assigned to the force against which the Marines maneuvered. In the Army, we would have called it the OPFOR. The Threat force at ARMVAL used Soviet tactics within the restrictions of our knowledge of them and the test requirements. Since a large part of this report is predicated on data obtained from Marines, to facilitate reading, the authors have used Threat and OPFOR interchangeably.

⁵Ibid., p 13.

⁶By a realistic or well-trained OPFOR, the authors imply that Soviet tactics and battle formations are employed which correctly portray speed and force ratio, reasonable attempts at using smoke, chemicals, and EW, and an attempt to acquaint the OPFOR unit with a Soviet mind-set.

Chapter 2

RESEARCH OBJECTIVES

The National Training Center (NTC) at Fort Irwin, California, soon expected to become an operational reality, is to have a dedicated OPFOR unit to provide more realistic training for US forces. That unit will not only employ OPFOR tactics, but will use simulated OPFOR equipment. Therefore, it appeared that US units preparing for an evaluation at Fort Irwin would need OPFOR-related training objectives.

As stated in Chapter 1, the research team considered several approaches to the development of OPFOR-related training objectives. This report describes work in which two field exercises employing an OPFOR group were examined as a potential source of training objectives. Since both field exercises involved armor operations, the research team chose to investigate the most common jobs involved in the exercises. The research was directed toward deriving counter OPFOR-related training objectives for each tank crewmember, in all aspects of their jobs. This was accomplished by administering questionnaires to and/or interviewing participants in two such exercises. Personnel from the 194th Armor Brigade who had participated in an exercise called RED THRUST were interviewed. Participants in a Marine Corps test called ARMVAL were both administered questionnaires and interviewed.

The primary objectives of the research addressed in this report are:

- I. To determine the impact of the OPFOR on US force job performance (job behavior) during field exercises where a well-trained opposing force employs realistic Soviet doctrine and tactics.
- II. To determine the effect of OPFOR training on US forces portraying the Soviet force.
- III. To determine whether these types of field exercises can be used as a source to develop OPFOR-related training objectives, particularly for the tank crew.

The focus of the research centered on those changes, if any, which occurred in US job behavior as a result of our forces facing a unit employing Soviet doctrine and tactics. It was reasoned that if job behavior was not affected, it would not matter what tactics (Soviet, North Korean, etc.) were being portrayed. Several documents being produced by the US Army Intelligence Center and School (Unit Training Manual for OPFOR at NTC, Individual Training Manual for OPFOR along lines of Soldier's Manual, and FM 34-74, Integration of OPFOR into a Training Program) do not analyze threat information from the perspective of the changes needed in US training at the job or task level. Nor is there experiment-based data on the general effects of Soviet-like tactics on a US force. (See "OPFOR: Intelligence Training Applications for Realistic Combat Training" in Military Intelligence, July-September 1980, pp 6-7, for more detail.)

Although the focus was on individual and crew job behavior, it was realized that the results might also have an impact on the development of doctrine and tactics. If, for

example, US force players had to make significant modifications in their tactics in order to counter the opposing force, it would be an indication that changes were in order. Therefore, even though the objectives did not include the development of new doctrine or tactics, it was felt that information useful to tacticians might result.

Another area of interest in this research was to evaluate the effectiveness of field exercises such as RED THRUST and ARMVAL in meeting the objectives of the OPFOR program as stated in AR 350-2. On the other hand, a full evaluation was not possible as it would have inordinately increased the length of the questionnaire and interview sessions. The effectiveness of the exercises in meeting the AR objectives was ascertained by comparing the responses of the participants to the stated objectives. The OPFOR program objectives are as follows:

Instill an awareness and understanding of the strengths and vulnerabilities of potential adversary doctrine, tactics, weapons systems, and organization.

Enhance individual and unit sense of purpose in peacetime by stimulating imagination and affording flexibility in the design of realistic training primarily at the division level and below.

Establish a competitive peacetime training challenge by providing an inherent self-evaluation of unit readiness through routine creation of a realistic battlefield environment to include electronic warfare, smoke aerosols, and appropriate opposing force ratios as specified in FM 100-5 and other training literature.

Contribute to the development of essential combined arms capabilities and combat developments in peacetime.

Encourage development of viable intelligence electronic warfare (EW), operations security (OPSEC), deception, unconventional warfare (UW), and linguist capabilities which are critical in war and often overlooked in peace.¹

The DA policy objectives as stated in AR 350-2 are:

OPFOR will be an integral part of all individual and collective training in which a knowledge of potential adversary doctrine, tactics, weapons systems, or organizations is basic to the effective application of US tactical skills and techniques.

OPFOR should provide US soldiers an opportunity to periodically "fight" as the opposing force in training, using the doctrine, tactics, weapons systems, and organizations of actual potential adversaries.

¹US Department of the Army. Opposing force (OPFOR) program. Army Regulation 350-2. Washington, DC: HQ, Department of the Army, August 15, 1978.

OPFOR training should ensure an uncooperative opposing force will create a competitive training challenge.²

²Ibid.

Chapter 3

METHOD

BACKGROUND

Selecting exercises. As stated previously, it was assumed that the best available source of data on how OPFOR tactics and doctrine affected US soldiers' job behavior would be personnel who had faced a realistic OPFOR. In fact, it was deemed a requirement that the scenario be authentic enough to expect the OPFOR to "defeat" the US force in the initial iterations.

Locating armor units who had recently participated in field maneuvers in CONUS against a trained OPFOR proved to be even more difficult than anticipated. Various units were contacted and most did not employ OPFOR in any way that approximated our needs. The 9th Infantry Division was considered because active interest in use of OPFOR in FTXs was expressed by the division commander at that time. However, the focus in this study was on armor units and the behavior of the tank crew rather than the infantry. One large test, Tactical Aircraft Effectiveness and Survivability in Close Air Support in Antiarmor Operations (TASVAL), conducted at Hunter-Liggett in 1979, was discussed at great length with FORSCOM's Opposing Force Training Detachment, Red Thrust, which had had a hand in training the OPFOR. The many problems they noted associated with the portrayal of the OPFOR by the 4/40, 4ID during the test cast doubt on the usefulness of the data we might obtain. Information provided by Red Thrust and an article that appeared in *Armor Magazine*¹ brought to our attention a field exercise held at Fort Irwin, California, in 1978, by the 194th Armor Brigade. The article described how a trained OPFOR impacts on US units. Contact was made with CPT Raymond and the Brigade S2 to see if any of the personnel who participated in RED THRUST in 1978 were still with the Brigade. Thirteen individuals were believed to still be with the 194th. Plans were made to meet with these participants in March 1980, to discuss what experiences they could recall.

Concomitantly, coordination was under way to collect data from an exercise being designed by the Marine Corps to test its plan for a new advanced antiarmor vehicle (ARMVAL). Red Thrust personnel gave invaluable support to this test in the early stages. Furthermore, their success in training the Marines who would portray the OPFOR, plus the expected commitment to the task of any Marine unit assigned, convinced the research team that this was a near ideal opportunity to obtain usable data.

¹G. E. Raymond, Jr. Red Thrust. *Armor Magazine*, 1979, 88(5), 18-19.

EXERCISE/TEST DESCRIPTION

RED THRUST Exercise, 194th Armor Brigade

The purpose of the RED THRUST exercise was to dramatize to tank and mechanized infantry platoon personnel what they might expect to face on the modern battlefield. Emphasis was placed on the intensity of the action and the mobility of the opposing forces.

Approximately 19 tank and mechanized platoons from the 194th participated in the RED THRUST exercise. Each platoon was given the mission of conducting an active defense against elements of an OPFOR motorized rifle battalion. An engineer battalion with earth moving equipment assisted the US platoons in preparing their battle positions. An artillery fire support team (FIST) team provided artillery support.

The OPFOR unit was made up of personnel from Troop D, 10th Cavalry, consisting of 22 armored personnel carriers (APCs) and 9 M48A5 tanks. These were organized into two reinforced motorized rifle companies. The APCs and tanks were modified to look like BMPs and T-62s. Smoke pots were attached to the vehicles and all crews were equipped with blanks, colored smoke grenades, and hand grenade simulators.

The OPFOR moved into the attack supported by massed artillery (simulated) and close air support. They moved toward the US force in a double march column, then at approximately nine kilometers from the US force, moved into a combat line formation. The T-62s led, followed by the BMPs. Movement was 15 to 20 kilometers per hour. Movement was covered by a smoke screen. OPFOR artillery was simulated by hundreds of pounds of C4 and demolition cord and smoke pots.

The OPFOR jammed all radio frequencies and used CS gas. Explosive charges were attached to the US force vehicles to simulate artillery hits. At a range of 2500 meters, the OPFOR began firing in mass while maintaining their fast closing speeds. During the entire OPFOR movement, simulated artillery fire kept falling in and around the US positions. Smoke, CS gas, and dust from the explosives soon hindered visual contact. REALTRAIN techniques were employed for casualty assessment. Further description of the scenario can be found in Volume II, Chapter 1.

After each platoon exercise, a critique was held to highlight the teaching points and lessons learned. CPT George E. Raymond, commander of the OPFOR group, was responsible for their training as well as being the RED THRUST exercise controller. His article² describing the field exercise is one of the few documents describing how a trained OPFOR impacts on the behavior of a US force. The article is short but contains much food for thought. The major purpose of the interviews was to obtain greater detail on the lessons learned cited in CPT Raymond's article.

²Ibid.

Advanced Antiarmor Vehicle Evaluation (ARMVAL)

ARMVAL was a Department of Defense evaluation conducted by the Marine Corps with assistance provided by the US Army Combat Developments Experimentation Command (CDEC). Using realistic tactical scenarios, the ARMVAL evaluation consisted of several iterations of three two sided, force-on-force experiments. Experiment I required the Friendly Force players to establish a blocking position, Experiment II required them to conduct an attack, and Experiment III required them to establish defensive positions to prevent OPFOR penetration of the forward edge of the battle area (FEBA). The experiments were designed to evaluate the contribution of the lightweight combat vehicle (LCV) to the effectiveness of forces engaging in combat missions.

To make the assessment, friendly combined arms forces first conducted combat operations using current antiarmor systems to obtain baseline data, and then with the LCV substituted for current systems. The OPFOR used conventional tanks and simulated Warsaw Pact weapons systems. The Marines also used their own LVTP-7 (amphibious personnel carriers). Both Marine and Army personnel served in the US and OPFOR forces.

An eye-safe Direct Fire Simulator (DFS) was used to simulate the weapons systems. Each system was mounted with sensors to determine whether the system received "hits." Casualty assessment was performed by a computer (Range Measurement System-2) in near real time. Hit data and position information for each system were fed into the computer which determined "kills."

Further information on the LCV and the three missions played can be found in Volume II, Chapter 4.

PROCEDURES

Before interviewing personnel from the 194th Armor Brigade, the research team compiled individual and crew task listings from available Army reference materials. These lists served as the basis for coordinating the discussions concerning the impact of Threat tactics on US soldiers' tasks and behaviors. Both group and individual discussion periods were conducted. Sessions were limited to two hours. All discussions were taped and later transcribed.

Even though the number of participants remaining was small, the research team was extremely fortunate that CPT Raymond was still with the Brigade to provide valuable input about the RED THRUST exercise. A general lament from the 194th personnel was that the information and experience gained from the Fort Irwin experience was now lost to the 194th and the Army due to personnel turbulence and lack of documentation. The essence of the dialogue from the 194th discussions is found in Volume II, Chapter 1.

From the transcriptions of the interviews with the 194th, the research team developed a questionnaire to be administered during the ARMVAL evaluation. Copies were sent to the Test Directorate at ARMVAL for approval and critique. ARMVAL participants (124) were interviewed at Fort Hunter-Liggett while the evaluation was

ongoing. The US and OPFOR personnel were interviewed separately. The interview procedures were identical for each force. The procedure used was as follows:

- (1) A briefing was given by the research team and Marine liaison officer.
- (2) The participants were first administered a paper-and-pencil questionnaire which required about one hour to complete. Additional time was allowed for those persons who needed it.
- (3) The participants were divided into groups of 15 to 20 individuals.
- (4) Each small group was interviewed by the research team and their responses were tape recorded. Any additional comments concerning the impact of Threat during the ARMVAL test were welcomed and discussed during the taping sessions.

In addition, taped interviews were conducted with commanders of both forces in the ARMVAL exercise. The interviews were limited to one hour for each commander. Excerpts from the dialogues with the crews and commanders are presented in Volume II, Chapter 2.

An informal exit briefing was presented by the research team to the Marine ARMVAL Test Director after completion of the interviews.

The composition of the sample of military personnel who participated in both the questionnaire and interview components of the research based on military service arm and the role played in the ARMVAL test are provided in Table 3-1. Details on the job positions held by the participants interviewed can be found in Volume II, Appendix A.

TABLE 3-1
Participants in Each Test Role by
Military Organization

	<u>US</u>		<u>OPFOR</u>		<u>TOTAL</u>	
Army	0%	(0)	13%	(16)	13%	(16)
Marine	62%	(77)	25%	(31)	87%	(108)
TOTAL	62%	(77)	38%	(47)	100%	(124)

It can be seen that more US force players than OPFOR players were interviewed. These participants were the ones who could be made available during the time frame scheduled for the questionnaire and interview sessions. They represent approximately two-thirds of the total number of test participants in the maneuver elements.

Copies of the questionnaires administered to both the Friendly and Threat forces are shown in Volume II, Appendix B. It can be noted that the term "Threat" rather than "OPFOR" is used throughout the questionnaires. This was done at the request of the ARMVAL Test Directorate. The Director stated that Marine Corps participants would not be familiar with the term OPFOR, and was afraid it might cause confusion. However, within the text of this report, the two terms are used interchangeably.

Chapter 4

IMPACTS OF OPFOR

A very large amount of subjective data was collected during the course of this research, not all of which was directly related to the objectives presented in Chapter 2. Other data were obtained fortuitously as a result of the open-ended nature of many of the items on the questionnaires and the questions asked during the interviews. The questions were designed to elicit information, opinions, and attitudinal expressions concerning the individual experiences of each test participant.¹ Although the questions did provide some original direction, no attempt was made to limit the topics discussed. For ease of reading, this report is divided into two volumes. Volume I contains the introduction, research objectives, method, research findings, discussion, and finally, the summary and implications. Volume II covers in greater detail the dialogues with the US and OPFOR participants from both field exercises. It contains the summaries of the ARMVAL players' responses to questions concerning the three combat missions conducted during the ARMVAL experimental trials and a complete summary of ancillary data.

Because of the varied nature of the subject matter covered by the responses in this volume, the discussion of results will be presented in two chapters. This chapter will describe, in summary fashion, the major findings relevant to the objectives presented in Chapter 2. Chapter 5 will summarize and discuss findings worthy of note that are less directly relevant to the primary objectives of this research.

Objective I--Impact of OPFOR on US Force Job Behavior

The first objective, as presented in Chapter 2, was:

- I. To determine the impact of the OPFOR on US Force job performance (job behavior) during field exercises where a well-trained opposing force employs realistic Soviet doctrine and tactics.

Surprisingly, it was found that very few behaviors changed. In essence, the US Force players felt that they did not need to change the way in which they did their jobs, but rather, that they had to do them faster and with less error.

¹It should be emphasized that the research team was not attempting to evaluate any aspect of the ARMVAL test itself. The team was only interested in how exercises with a realistic OPFOR impacted on players from both sides. ARMVAL presented a rare opportunity to survey players while the exercises were still fresh in their minds. The team appreciates the cooperation of the combined Marine and Army test directorate for allowing the opportunity to conduct the surveys while the test was still in progress.

Tables 4-1 through 4-3 present data on the responses of US Force players in the ARMVAL test to items related to changes in job performance.

TABLE 4-1

Distribution of Responses to the Question:

Did you discover any areas of your job which had to be modified or changed after maneuvering against a well-trained Threat Force?

	%	N
Yes	31	24
No	60	46
No response	9	7
TOTAL	100	77

TABLE 4-2

Distribution of Responses to the Question:

Did you develop different methods or techniques to counter Threat tactics?

	%	N
Yes	23	18
No	60	46
No response	18	13
TOTAL	100	77

TABLE 4-3

Distribution of Responses to the Question:

Did you perform your job differently during the three missions at ARMVAL than you did during your regular military training?

	Yes		No		Total No.* in Exper.
	%	N	%	N	
EXP I: US Block	38	11	62	18	29
EXP II: US Attack	43	32	57	42	74
EXP III: US Defend	20	8	80	32	40

*Not all US Force respondents (77) participated in each experiment.

As can be seen, substantial minorities of the respondents indicated that they did perform differently during the test. However, this apparently resulted largely from a misinterpretation of the questions. During the interviews it was discovered that the "different" behavior was different primarily in terms of the speed and effectiveness with which tasks had to be performed. For example, the participants mentioned that they learned not to stay in one firing position too long, to make better use of terrain, to choose better and prepare better firing positions, to avoid skylining, to open fire at the proper ranges, and to work as a team. While learning these lessons, the troops did change their behavior. However, what they learned was how they should have performed their jobs to begin with. In other words, most of what they learned was how to apply more effectively the doctrinal and tactical principles they had already learned.

Although the consensus was that jobs changed little as US Force players learned how to better counter the Threat, there were, nevertheless, some changes made in the way the troops reacted during the course of the exercises. Three things mentioned by several participants were:

(a) Shortened fire commands were used; this cut down on engagement times. These were considered to be necessary because of the speed with which the Threat Forces approached.

(b) US gunners in the RED THRUST exercise engaged targets with the battlesight at ranges which doctrinally call for precision firing. This was necessitated because of difficulties in ranging caused by both the high approach speeds and the fact that targets were often in view only momentarily due to smoke and/or dust. ARMVAL gunners did not range to the targets because of the line-of-sight hit/miss system employed. However, they did start to open fire at longer ranges as they could not wait until the targets were in the optimum range.

(c) Disengagement ranges during retrograde operations were increased. The consensus appeared to be that US Forces had to disengage by the time the Threat force approached within 1500 meters to avoid being overrun. Normally, disengagement takes

place at lesser interdistances. Again, this was necessitated by the oncoming speed of the Threat Force.

Changes such as those outlined above might better be considered to be situational adjustments rather than actual changes in jobs, although the changes do have implications for training and doctrine. Therefore, in summary, it appears that individual basic job procedures did not have to be modified in any significant way in response to the OPFOR. However, the US force players did have to learn to perform their tasks both faster and more effectively to counter the speed and numerical superiority of the OPFOR groups. As one soldier put it: "We learned how important it was to know our jobs."

Objective II--Impact of OPFOR Training on US Forces

The second objective presented in Chapter 2 was:

- II. To determine the effect of OPFOR training on US Forces portraying the Soviet force.

Critics of the OPFOR concept hold that training a group to serve as an OPFOR would take too much time away from regular training and cause confusion when the soldiers again serve in their normal capacity as part of a US Force. The data obtained only partially support these fears. Tables 4-4 and 4-5 show the responses of the players to items reflecting these concerns.

TABLE 4-4

Distribution of OPFOR Responses to the Statement:

Threat training takes too much time from regular training.

	%	N
Agree	17	8
Slightly agree	13	6
Borderline	28	13
Slightly disagree	6	3
Disagree	32	15
No response	4	2
TOTAL	100	47

TABLE 4-5

Distribution of Responses to the Statement:

Threat training would cause confusion when using friendly tactics.

	<u>US</u>	<u>OPFOR</u>	<u>TOTAL</u> (as a group)
Agree	5% (4)	19% (9)	10% (13)
Slightly agree	9% (7)	6% (3)	8% (10)
Borderline	22% (17)	9% (4)	17% (21)
Slightly disagree	6% (5)	17% (8)	10% (13)
Disagree	38% (29)	45% (21)	40% (50)
No response	20% (15)	4% (2)	14% (17)
TOTAL N	77	47	124

Opinions on whether OPFOR training took too much time away from regular training were fairly evenly divided. Combining categories from Table 4-4 shows that 30% of the respondents felt that it did, 38% felt it did not, and 32% either were not sure or did not respond. Hence, the data provide some justification for the concern about loss of regular training time, although the evidence is not overwhelming. However, the majority of the respondents felt that the OPFOR training would not confuse them in their regular jobs. Combining categories in Table 4-5 indicates that 25% of the OPFOR group felt they might be confused against 62% who felt they would not.

The same item concerning confusion (see Table 4-5) was included in the questionnaires administered to the US Force players. They, too, largely felt that they would not be confused by OPFOR training. However, less credence can be placed in their responses as they did not undergo OPFOR training. This probably accounts for the large proportion (42%) that either chose the "borderline" response or failed to respond to the item.

While there are indications that OPFOR training may tend to reduce the preparedness of the trainees, it is possible that the benefits might still outweigh the disadvantages. The data in Table 4-6 and 4-7 indicate that the OPFOR group at ARMVAL felt that the training provided considerable benefits. A large majority felt that they did benefit from the training and furthermore felt that every service member would benefit. During the interviews it was found that the "No" responses were largely related to the test environment. Because of the large number of trials, many of the jobs became monotonous. This was especially true of the individuals who role-played crewmember jobs (assistant gunner, crew chief, driver) and were less actively involved in the simulated engagements. Boredom was less of a problem for vehicle commanders and gunners, and they tended to view the OPFOR training more favorably.

TABLE 4-6

Distribution of OPFOR Responses to the Question:

Did you benefit from having had Threat training?

	%	N
Yes	77	36
No	17	8
No response	6	3
TOTAL	100	47

TABLE 4-7

Distribution of OPFOR Responses to the Question:

Would Threat training benefit every service member?

	%	N
Yes	83	39
No	9	4
No response	9	4
TOTAL	100	47

Table 4-8 presents additional data related to the benefits of OPFOR training. Respondents were permitted to check as many statements as they felt applied to this item. As can be seen, 88% of the checks were made to the positive response alternatives, again indicating that the training was beneficial.

TABLE 4-8

Distribution of OPFOR Responses to the Item:

If at sometime in the future you had to fight against a nation that used Threat tactics, check those statements you feel apply to you and the Threat training you received.

<u>Positive response alternatives</u>	88%	(59)
---------------------------------------	-----	------

Better prepared because I took the Threat training.
 Feel that I have a better understanding and insight into how they think and perform.

<u>Negative response alternatives</u>	12%	(8)
---------------------------------------	-----	------

Would do just as well without having to undergo Threat training.
 Don't feel that Threat training would help me.
 Could better use the training time to learn US tactics.

While these results concerning the potential gains and losses that accrue from OPFOR training may be open to a variety of interpretations, it is the opinion of the authors that the total effect is beneficial. Less than half of the respondents indicated that the training was too time consuming or would cause confusion when performing their regular jobs. A large majority indicated that they personally benefited from the training and thought that all soldiers would benefit. Therefore, it seems that something could be gained by providing all service members with OPFOR training. Furthermore, it is probable that any adverse effects would be reversed in a short time after the soldiers returned to and practiced their regular jobs.

Apparently, the Threat tactics employed by the OPFOR were not considered to be especially difficult. Table 4-9 provides support for this assertion.

TABLE 4-9

Distribution of OPFOR Responses to the Question:

How difficult was it to learn Threat tactics?

	%	N
Very difficult	0	0
Difficult	4	2
Somewhat difficult	44	21
No difficulty	51	24
TOTAL	100	47

Elaboration by the respondents of just what tasks or elements of the tactics did provide some difficulty is revealing. Tasks most frequently listed were:

Maintaining speed and vehicle interval.

Learning combat formations.

Firing on the move.

Maintaining control without using radio communications.

Many of the respondents indicated that they performed their tasks while portraying the Threat in much the same way they performed them in their regular jobs. Table 4-10 shows that about half of the respondents saw no job differences in two of the missions. However, a large majority (85%) indicated that their jobs were different while on defense. This can probably be explained by the differences between US forces and Soviet defensive tactics. A Soviet unit digs in deeply, does not move once emplaced, and rigid control is exercised concerning sectors of fire, etc. US forces are normally permitted greater freedom of action. During the interviews, many Threat players expressed frustration at the lack of flexibility in permitted actions, especially on defense.

TABLE 4-10

Distribution of OPFOR Responses to the Question:

Did you perform your job differently during the three missions at ARMVAL than you did during your regular military training?

	Yes		No		Total No.* in Exper.
	%	N	%	N	
EXP I. US Block	49	18	51	19	37
EXP II. US Attack	85	23	15	4	27
EXP III. US Defend	67	26	33	13	39

*Not all respondents (47) participated in each experiment.

To summarize, it appears that learning to play the OPFOR was not particularly difficult. While a minority said that it was too time consuming and might result in confusion when returning to a regular job, a large majority said that OPFOR training would be beneficial to all soldiers. Therefore, the authors conclude that the benefits of training all personnel to play an OPFOR role would outweigh the disadvantages.

Objective III--Field Exercises as a Source of OPFOR-Related Training Objectives

The third primary objective given in Chapter 2 was:

- III. To determine whether these types of field exercises can be used as a source to develop OPFOR-related training objectives, particularly for the tank crew.

Based on the findings from this data, field exercises such as RED THRUST and ARMVAL revealed that Friendly Force players said that no significant change was necessary in their jobs to maneuver effectively against a realistic OPFOR. This does not imply that the exercises failed to provide very useful training for US Force players. All indications are that they did. However, no new training objectives appear to be required. What the troops did indicate was required was greater mastery of the knowledges and skills they had already learned.

On the other hand, field exercises used for the purpose of deriving OPFOR-related training objectives for ARTEPs may be too constrained. Both scenarios (RED THRUST and ARMVAL) covered only a very small range of activities (which began just before the initial engagement and ended shortly thereafter). There was, for example, no real need for Friendly Forces to be able to identify vehicles, as it was obvious that all vehicles in the approaching force were hostile. The participants only had to distinguish vehicle type (e.g., tanks from BMPs) in order to engage the most lethal targets.

Attitudinal and Motivational Effects on Friendly Forces

In a large measure, AR 350-2, the implementing regulation for the OPFOR concept, established objectives to improve soldier motivation for training. Behind these objectives is the implicit assumption that improved motivation will result in improved learning and job performance. The use of the OPFOR was to provide the competitive challenge for increasing that motivation. To date, there have been no studies known to the authors that have attempted to assess whether these program objectives have been met.

Some of the data obtained during this effort allow some inferences to be drawn concerning the motivational aspects of facing a realistic OPFOR. The data in Table 4-11 indicate that regular maneuvers against an OPFOR would increase interest in training for a large majority of soldiers, while decreasing the interest for only a very small minority. An even greater majority said that regular maneuvers against an OPFOR would increase their regular job skills with nearly half indicating they would be "greatly" increased (see Table 4-12). There are many other factors besides maneuvering against an OPFOR unit that can affect motivation and attitude. Participation in engagement simulation

exercises, and superior tactical training are factors which can influence a person's way of thinking. Respondents generally have considerable difficulty in isolating the sources of their attitudes. The tables below represent just one factor and may even be a combination of many factors, yet these figures give us some consensus of how the ARMVAL participants perceived how the use of an OPFOR affected their overall interest.

TABLE 4-11

Distribution of US Force Responses to the Question:

How would regular maneuvers against an OPFOR
affect your interest in training?

	%	N
Greatly increase interest	47	36
Increase interest	35	27
Have little or no effect	9	7
Slightly decrease interest	2	2
Greatly decrease interest	4	3
No response	3	2
TOTAL	100	77

TABLE 4-12

Distribution of US Force Responses to the Question:

How would regular maneuvers against an OPFOR
affect your US skills?

	%	N
Greatly increase US skills	47	36
Increase US skills	44	34
Have little or no effect	9	7
TOTAL	100	77

One of the Army's stated objectives for the OPFOR program is to "instill an awareness and understanding of the strengths and vulnerabilities of potential adversary doctrine, tactics, weapons systems and organization." Tables 4-13 and 4-14 below give an indication of how well this objective was met by the ARMVAL experience.

TABLE 4-13

Distribution of US Force Responses to the Question:

Has maneuvering against a well-trained Threat unit helped you to understand Soviet tactics?

	%	N
Yes	80	62
No	15	12
No response	5	3
TOTAL	100	77

TABLE 4-14

Distribution of Responses to the Question:

Did your experience with Threat tactics change your understanding of the strengths and weaknesses of the Soviet military?

	<u>US</u>	<u>OPFOR</u>	<u>TOTAL</u> (as a group)
Yes	53% (41)	53% (25)	53% (66)
No	42% (32)	42% (20)	42% (52)
No response	5% (4)	4% (2)	5% (6)
TOTAL	77	47	124

A large percentage indicated that the experience helped them to understand Soviet tactics, but only about half indicated it helped them understand the strengths and weaknesses of the Soviet military. The specifics of what was learned in this latter regard are contained in comments made on the questionnaires and during the interviews. Several participants mentioned that they learned to judge the effective ranges of both their own and the Threat's weapons systems. Consequently, they knew when they were out of range and could maneuver in relative safety. By learning that their own tanks had a greater effective range than their adversaries, they were able to use hit-and-run tactics effectively. However, because of the slowness of the M60, they had difficulty in maintaining standoff ranges. They also learned that the Threat tanks were difficult to kill with frontal shots, but were vulnerable to flank shots.

It is suspected that the participants' ability to judge the range between themselves and OPFOR vehicles was at least partially geographically dependent. To obtain comparable data across iterations for each mission, it was necessary to run the iterations

in the same geographical setting. This provided an opportunity to learn ranges through experience. That is, the participants could learn that when an OPFOR vehicle reached a certain point on the terrain that it was within their range because they would be able to obtain hits. Similarly, they could learn that the OPFOR could not achieve any hits until they reached some closer point. Had each iteration been in a different terrain setting, the results might have been different. That is, the in-range and out-of-range judgments might have been poorer.

Table 4-15 shows that the ARMVAL experience changed slightly less than half of the participants' opinions of the Soviet military. It appears to have influenced more of the OPFOR players. However, the difference between the responses is not statistically significant (eliminating the non-respondents, $\chi^2 = 1.89$, $= p > .05$). Furthermore, since this subject did not come up in the interview discussions, it is not possible to determine whether a positive or negative shift occurred.

TABLE 4-15

Distribution of Responses to the Question:

Has your opinion of the Soviet military
changed since you have experienced
Threat tactics?

	<u>US</u>	<u>OPFOR</u>	<u>TOTAL</u> (as a group)
Yes	35% (28)	51% (24)	41% (51)
No	58% (45)	47% (22)	54% (67)
No response	6% (5)	2% (1)	5% (6)
TOTAL	77	47	124

From the limited data available, it appears that exercises such as ARMVAL are instrumental in meeting some of the objectives outlined in AR 350-2. In general, the respondents said that regular participation in such exercises would both increase their interest in training and enhance their job skills. They also indicated that the exercises helped them understand Soviet tactics and the strengths and weaknesses of the Soviet military. Hence, the concepts behind the OPFOR program appear to be good ones.

Chapter 5

LESSONS LEARNED: IMPLICATIONS FOR DOCTRINE, TACTICS AND TRAINING

The comments received both on the questionnaires and during the interviews were examined for areas of general agreement. A number of repetitive themes were noted. Conflicting opinions were also expressed. Most notably, differences of opinion existed on how well US forces chose firing positions and how well they used the terrain. However, agreement on most subjects was quite striking. Considering the differences in the perspectives of the OPFOR and Friendly Force players, and the differences in the conduct of the RED THRUST exercise and the ARMVAL test, the observed extent of the similarity in the comments was not expected. It was concluded that a number of common lessons were learned, and that these were worth documenting because of their implications for doctrine, tactics and training, even though they were not directly related to the objectives of this research.

Of course, what was learned from participation in RED THRUST and ARMVAL was both determined and limited by the artificiality and numerous other constraints on the exercises. Nevertheless, the scenarios played provided more realism than most, so the lessons learned should be worth careful consideration by authorities. Those that pass initial screening should be more fully explored as opportunities arise in the future.

Comments relevant to a particular point or issue were typically scattered among the responses to different items or interview questions. The authors have attempted to synthesize the comments on the major common themes, and to summarize them in this chapter. The discussion is divided into two sections. The first section deals with changes made in or suggestions for changes in doctrine and/or tactics. The second section deals with training needs based on deficiencies noted. Obviously, any forthcoming changes in doctrine or tactics also have implications for training. However, until authorities determine that changes in doctrine or tactics are in fact needed, no changes in training need be initiated.

Doctrinal and Tactical Implications

Planning. Many respondents mentioned that more complete planning before the battle began was necessary. Commanders simply did not have time to assess the situation and issue orders in a timely fashion during the engagement. Some commanders became confused and hesitated, losing valuable time. The troops felt that there should be specific plans or SOPs to handle various probable contingencies to minimize the need for orders. This was considered especially important by the RED THRUST participants whose radios were jammed during the engagement. A need for better communications procedures was also indicated by ARMVAL participants, even though their radio communications were not jammed.

The implications of these kinds of comments is that specific doctrine or procedures need to be developed to ensure teamwork while minimizing the need for communications.

The need for commanders to plan all phases of the operation in greater detail is also implied.

Disengagement. Perhaps the most frequent comments made were variations of "we didn't disengage soon enough." The Friendly Forces were judged to become too decisively engaged with the lead Threat vehicles. The consensus seemed to be that the minimum distance for disengagement was about 1500 meters. Otherwise, the Friendly Forces would be overrun. One soldier mentioned that tanks should be backed into position to permit faster withdrawals. The need for greater ground speed during retrograde operations was also mentioned. One soldier suggested that the M60 was too slow, and that this phase of the operation would be improved with the acquisition of the M1.

Failure to disengage soon enough probably stems from two sources. First of all, our forces were unaccustomed to facing a threat force that moved with the speed of the OPFOR, and simply misjudged the time required to get out. Secondly, 1500 meters is considered to be a near optimum range for the tank main gun. Our personnel have been taught to engage at this range rather than to move.

The implication of the comments on this subject is that some changes in procedures will have to be made if we are to be successful in retrograde operations. Specifically, if we cannot stop the OPFOR, we must learn to disengage sooner, move to the next position faster, and be ready to engage again immediately.

Engagement. Participants in the RED THRUST exercise mentioned that ranging was nearly impossible. This was due to a combination of scintillation (heat waves), the fast approach speeds of the OPFOR, and obscuration from dust and smoke. Gunners were forced to engage at longer ranges using battlesight than they had been trained to do. Because of the numerical superiority of the OPFOR, they felt they could ill afford to wait to engage until the hostile vehicles were in the optimum battlesight range. Participants in ARMVAL also mentioned the necessity for engaging at the maximum rather than the optimum range of their weapons. However, ranging was not done in ARMVAL because of the line-of-sight laser hit/miss scoring system.

Some changes in weapons deployment were made during the later stages of ARMVAL. More "hit and run" tactics were employed to slow and attrit the OPFOR before they were engaged by weapons in the initial defensive positions. TOWs were used more frequently at their maximum range. Dragons were employed in ambush on the flanks to improve the number of casualties inflicted. However, the use of this tactic was questioned because of the difficulty of extricating the Dragons as the OPFOR approached. (It was not mentioned by the respondents, but it would seem that Dragon teams so deployed would also be highly vulnerable to overhead artillery.)

These changes in deployment of weapons were made to counter the tactics employed by the OPFOR and appeared to be successful in the ARMVAL scenarios. Their potential for wider adoption needs to be evaluated. It seems especially important to evaluate the effectiveness of long-range tank gunnery as a means of slowing the attack and somewhat diminishing the unfavorable force ratio.

Force composition. Respondents from both the RED THRUST exercise and the ARMVAL test indicated that Friendly Forces needed more firepower to counter the greater numerical superiority of the OPFOR. This was certainly borne out in the authors'

observations during the ARMVAL test. Respondents from both sides of the test also indicated that the TOW was perhaps the US forces' most effective weapon in the ARMVAL evaluation. The TOW was employed at standoff ranges and was able to achieve kills before the Friendly Forces were within the range of OPFOR weapons. The TOW was also used effectively on offense. Compared to an M1 tank, the TOW is a relatively inexpensive weapon. Increased numbers of TOW systems (or a new long-range antitank weapon) might be at least a partial answer to the firepower problem during an attack. Since the ARMVAL evaluation did not fully integrate all weapons systems available to both sides, a true evaluation of the TOW's capabilities during actual combat is not possible. In actual combat, the TOW weapon, if not protected from overhead artillery fire, might not have the same success as it did in the ARMVAL evaluation. It is a topic that needs further exploration. In addition, the various tradeoffs involved in changing or adding to the force structure to increase antiarmor firepower should be investigated.

Training Implications

Training time. Estimates of time required to train a US force to properly engage a well-trained OPFOR ranged from four to eight weeks. However, one ARMVAL respondent pointed out that they were still learning after nearly five months. Training time estimates from ARMVAL respondents might have been higher had artillery, electronic warfare, smoke and CBR warfare also been played.

The respondents' comments on training time certainly indicate that our forces cannot prepare themselves to face an OPFOR in one or two short FTXs. A well-planned and fairly extensive field training program is indicated. The availability of a well-trained OPFOR group is also implied. Such training requires the commitment of considerable time and other resources. It is unlikely that the experience at the National Training Center (NTC) alone will be adequate. Therefore, some training must be accomplished at home stations. Further discussion of the implications for the NTC will be presented in Chapter 6.

Site preparation. There was general agreement that engineer support was not used as effectively as it might have been. In RED THRUST, firing positions were banked in front but not on the sides, leaving the roadwheels exposed and leading to easier detection and fire from the flank. Similar comments were obtained from ARMVAL participants. Positions were often judged to be poorly prepared in retrospect. Positions were chosen in front rather than in the "saddle" of mounds, exposing the more vulnerable sides of the vehicles. It was also suggested that engineers could be employed to erect obstacles or dig trenches in the best avenues of approach to slow the attack. Cratering of roads by supporting artillery was another approach suggested for slowing the attack. The use of mines to canalize the Threat was also suggested, if time will allow their use. There is some contention that the future battlefield will be too fluid to allow extensive, deliberate engineer efforts.

These findings suggest that more training in the choice and preparation of defensive positions is needed. They also suggest that engineer support should be made available for a large number of field exercises so that combat arms personnel can be trained to make optimum use of their capabilities.

OPFOR credibility. Disbelief that the Soviet Army (or armies trained by the Soviets) would actually use the tactics portrayed by the OPFOR groups came from respondents who participated in both RED THRUST and ARMVAL. However, the vast majority came from the ARMVAL participants. Both the OPFOR and Friendly Force players questioned the validity of some tactics. The mass and speed characteristics of the OPFOR were not questioned. Disbelief of OPFOR tactics centered in three areas: (a) Participants did not believe that the Soviets would charge across open territory with no attempt to use the terrain for protection once they had been engaged, (b) they did not believe that units would blindly follow the last order of a leader who was killed when the order ceased to make tactical sense, and (c) they did not believe that fields of fire would be so rigidly controlled that gaps would be left where vehicles were destroyed. In brief, US personnel simply did not believe that the Soviet soldiers would display so little initiative.

This disbelief has a major implication for training. If the troops do not believe that the tactics used against them are realistic, they will be less motivated to learn. Therefore, training authorities must convince their soldiers that the tactics are realistic. Furthermore, to ensure continuing credibility, authorities must ensure that the OPFOR portrayal is as realistic as possible within the constraints of the training situation. Any deviations due to safety and resource constraints should be pointed out to the trainees. Otherwise, if they find that part of the portrayal is unrealistic without being told so and why, they may assume that none of it is realistic, and the training managers as well as the training itself may lose credibility.

One reason why the ARMVAL participants questioned the validity of the OPFOR tactics more than the RED THRUST players did may lie in the fact that smoke, OPFOR artillery, EW, and CBR warfare were not played. This undoubtedly made the OPFOR seem more vulnerable than in the RED THRUST exercise. Such constraints, due to the necessity for following a test plan, should have been pointed out to the participants, at least at the conclusion of the test.

It is hypothesized that the expressed disbelief of Soviet tactics stems from the fact that they are so different from our own. Yet, the best information available from the intelligence community was employed by Red Thrust in training the OPFOR groups for both RED THRUST and ARMVAL. There is also ample evidence that these tactical concepts are not new in Soviet thinking. In fact, Soviet doctrine and tactics appear to have changed little since World War II (WWII). Some recent articles on this subject will be summarized below for two reasons. First, the material presented can be useful to trainers in convincing their personnel of the authenticity of the tactics they will face in fighting an OPFOR at the NTC. Secondly, the lessons learned by the Germans in fighting the Soviets during WWII should be useful to tacticians looking for the best means of countering the threat. The authors recommend the articles to anyone concerned with preparing a unit to fight against a force employing Soviet tactics.

A highly relevant two-part article by Vernon^{1,2} appeared recently in Military Review. Vernon served as a defense Army Attache in Moscow. His article looks at the

¹G. D. Vernon. Soviet combat operations in World War II. Part I, Lessons for today. Military Review, March 1980, 60(3), 30-40.

²G. D. Vernon. Soviet combat operations in World War II: Part II, Lessons for today. Military Review, April 1980, 60(4), 42-50.

Soviets through the eyes of their German opponents in WWII. In reading the article, one sees the great similarity between the tactics espoused by the Soviets today and those employed during WWII. Soviet combat methods made a lasting impression on the Germans. The uniqueness of the Soviet mind-set was stressed. Vernon quoted the following from a German manuscript:

No one who belongs to the Western sphere of culture will ever be able to understand the Russians completely, or to analyze the character and soul of this Asiatic who has grown up on the far side of the border of Europe.³

Vernon also pointed out that German units staffed with personnel who had no experience against the Soviets almost always failed initially. As units gained experience, they learned to counter the Soviet methods quite effectively. The Germans were certainly not naive when they invaded Soviet Russia. Hence, this observation points out the need for experience (which hopefully can be gained through training) in fighting against Soviet tactics.

Vernon's article also provides some insight into how the Germans evaluated Soviet leadership. They found a qualitative difference in the various Soviet command echelons:

In Soviet Russia the top level leadership was purposeful and capable while the intermediate and lower echelons were, at least in the beginning, slow to take the initiative and unwilling to deviate from a set pattern of battle.⁴

It was believed by the Germans that the Soviet rigid pattern of training and strict discipline, along with the small unit commander's fear of doing something wrong, and being called to account for it, was greater than the urge to take advantage of a situation.

The current evaluation of the Soviet enlisted man seems to be little different than that expressed by the Germans. Excerpts from Vernon's article state: "They have been trained to execute orders to the letter and without hesitation....Unquestioned obedience to orders has become a feature of their military system."⁵

A very frequent comment made by the ARMVAL personnel was directed toward the lack of initiative shown by OPFOR personnel. They often commented that the OPFOR is lost without their leaders. Some of the participants expressed doubt that this would be true and felt that the Soviets would not be that rigid. Here is what the Germans found regarding the initiative of the Soviets: "Russian units which lose their commanders tend to disintegrate rather rapidly."⁶ Vernon stated that Kesselring noted that the Soviet soldier's primary disadvantage was his lack of initiative. General Halder felt that when

³Vernon, op. cit., March 1980, p 32.

⁴Vernon, op. cit., March 1980, p 33.

⁵Ibid.

⁶Ibid.

faced by surprise and unseen situations, the Soviet soldier was easy prey to panic. Current Threat information tends to indicate that the Soviet soldier of today may not be much different from the soldier of WWII.

In the second part of his article, Vernon goes on to point out that:

Russian reactions to the tactical rules of warfare, and to tricks of the trade such as envelopment, flanking threat, feint, surprise, etc., could never be determined beforehand....Their execution at the lower levels, however, was ruthless with little emphasis on initiative or regard for casualties. There was a tendency to reinforce failure until, through sheer mass, it became success.⁷ (Underlining added by present authors.)

The same policies of execution are used today even though close to 40 years have elapsed since 1943.

Our modern Soviet references stress the use of massed echelons attacking in waves. Following is an excerpt from what the Germans had to say: "Again wave after wave attacked, and wave after wave was thrown back, suffering appalling losses."⁸ These huge losses of personnel continued until 1945. Modern Soviet tactics still stress this same approach to combat.

Defensive tactics also seem to have changed little. The Germans noted that characteristic Soviet Army defensive tactics included an extraordinary capability to dig in, to construct field fortifications, to develop carefully organized fire plans, and to effectively use camouflage and dummy positions. When faced with a major attack, the Russians tended to hold their fire until the enemy approached to a favorable range and then opened with surprise fire. Positions were constructed in depth, often using dug-in tanks. A major comment from ARMVAL personnel regarding the OPFOR's defensive posture concerned the excellent use of well dug-in positions for their vehicles, making it harder to see and hit OPFOR vehicles.

Vernon states that "western specialists tend to debate whether the Soviets can meet the norms established by Soviet doctrine rather than the validity of the doctrine itself."⁹ The individuals interviewed at ARMVAL and the 194th Brigade questioned the fundamental soundness of the doctrine, especially with regard to the attack.

An article by Harrison deals more specifically with the tactical lessons learned by the Germans in WWII.¹⁰ He suggests that the lessons learned by the Germans still seem

⁷Vernon, op. cit., April 1980, pp 41-42.

⁸Ibid.

⁹Ibid., p 49.

¹⁰C. E. Harrison, Lessons learned in fighting outnumbered. Air Defense, April-June 1980, 39-41.

applicable to any future war on a similar front. Harrison points out that German commanders developed "flexible" defensive tactics. Those tactics were similar to today's active defense, allowing for concentration of force against the main attack while accepting risk elsewhere. Harrison noted that Field Marshal Kleist fought off five Soviet attacks during 1943. The first attack employed 20 to 22 divisions, the second 30 divisions, and the next three attacks consisted of approximately 36 divisions. The Germans had to develop and take extraordinary measures to prevent annihilation by vastly numerically superior Soviet forces. The German experience showed that they could successfully fight actions with a strength ratio of 1:15 as long as units were intact and adequately equipped.

Lessons learned from these battles could be invaluable to today's Army. For example, Harrison points out that several procedures were developed to communicate without radio (wire communications were often totally destroyed by the initial Soviet artillery fires). These might be equally effective today, as jamming can certainly be expected. The article points to several other forgotten lessons learned by the Germans, all of which might be well worth relearning.

In summary, it appears that current Soviet doctrine and tactics are essentially the same as those observed in WWII. Those aspects of Soviet doctrine and tactics which the RED THRUST and ARMVAL participants found difficult to believe were actually employed. The Soviets did attack in great mass--willing to accept appalling losses. The lower echelons were slow to take any initiative or to deviate from a set pattern with unquestioned obedience to orders. In brief, their reported behavior was the same as expected today. Therefore, it is imperative that our forces be convinced that the tactics are authentic. It is also imperative that they have ample opportunity to learn to counter the tactics, taking advantage of lessons learned in the past.

Chapter 6

SUMMARY AND IMPLICATIONS FOR THE NATIONAL TRAINING CENTER

While the OPFOR training concept has been utilized to some extent, it has not been adopted Army-wide. Some military units have developed and tailored an OPFOR program to meet its specific needs. Moreover, the frequency with which OPFOR is employed in FTXs and ARTEPs and the fidelity with which Soviet tactics are played varies greatly from unit to unit. When similarity is found among units, it is usually because they have elected to use the training materials produced by FORSCOM's OPFOR Training Detachment, Red Thrust, located at Fort Hood, Texas. Hence, comparisons were difficult due to individual variations and objectives in each program. However, two events--one an FTX and the other an operational test--provided the basis for examining several important training questions related to OPFOR. The OPFOR was trained, in both events, with the basic organization and tactics taught by FORSCOM's Red Thrust. Thus, both programs stemmed from a common training base. One event was an FTX held in 1978 by the 194th Armor Brigade whose purpose was to demonstrate the primary changes which have occurred on the modern battlefield related to Soviet tactics. To do this, an attempt was made to simulate a complete threat battle environment by including mass artillery simulation, NBC, smoke, and electronic jamming of radio communications. An OPFOR of company size using Soviet tactics attacked platoon sized units in prepared defensive positions. The second event was ARMVAL, an evaluation of the LCV within a mix of combat missions with varied force composition maneuvering against an OPFOR. ARMVAL emphasized OPFOR maneuver and force ratios without use of smoke, NBC, or electronic warfare.

The overriding interest of this research project was to determine what behavioral changes, if any, result when US soldiers, especially tank crews, train against a correctly configured and maneuvering OPFOR. (While special emphasis was on the US units, soldiers in the OPFOR units were studied as well.) Two principal issues within the context of this question were addressed. First, do soldiers perform their jobs (tasks) differently when faced by a Soviet-like attack? Can it be assumed that a US soldier who has learned to perform his job (task) as presently taught will survive on a modern battlefield? or, Are there adaptations which a soldier must make to this changed tactical situation that can be observed in training exercises and taught now, not learned through experience after the first or second battle? Second, are there other behavioral or attitudinal effects that result from facing Soviet-like tactics that can be observed or elicited which may have training implications?

IMPACT OF OPFOR TACTICS ON US JOB PERFORMANCE

One of the problems faced by military trainers in developing OPFOR-related training objectives is to determine what threat information is critical for various ranks and MOSs to know. Because the proliferation and variability in threat information is staggering, the average military trainer responsible for teaching threat is overwhelmed. He has little time to evaluate how such information might require changes in tasks his

squad or platoon perform. This study has followed the procedure of identifying critical threat information by observing field exercises where a trained OPFOR unit was employed. Hence, a fundamental assumption in this study is that the most important information needed in an integrated US/OPFOR training program was that information on threat operations or tactics which elicited a change or modification in US job performance.

Interviews with the 194th and ARMVAL personnel placed stress in the questioning on identifying any tasks which required modification as a result of the tactics used by the OPFOR. After reviewing all the US responses concerned with impact of OPFOR on US tasks, it was concluded that the US basic job structure remained unchanged. However, what was identified in need of improvement was the skill and proficiency with which the tasks were performed.

The requirement to perform all tasks at markedly increased speeds produced the most dramatic change in troop behavior. The fast tempo of OPFOR actions and the large force ratio forced a speedup in reaction time. The simplicity of such an observation does not diminish its importance. US units accustomed to the reduced speeds characteristic of US tactics are shocked by the acceleration of events during an OPFOR attack. There is serious doubt that their present training prepares them to deal effectively with the rapid pace of an actual Soviet unit in the attack. Some comments by soldiers on where skill and proficiency had to improve are:

- Had to be more aware of what was going on.
- Had to search more in order to select better cover and concealment.
- Being fired at by lasers made us think and plan what to do next.
- Learned the capabilities and limitations of our equipment and tactics.
- Learned how to use our weapons systems better.

Clearly these responses indicate that OPFOR had a positive impact. In a training setting the knowledge gained is valuable and timely; if it must wait to be learned on the battlefield, it is too late. One of the great positive values is that it makes US players much more aware of US tasks and skills and creates an increased appreciation for US tactics which was lacking before. For example, although tasks such as driving and gunnery focus on speed as an integral part of their performance, these tasks had to be performed with even greater speed and precision against the OPFOR. Planning for missions had to be done with much more attention to detail and presented with greater specificity to subordinates. An improved understanding of how to employ combat engineers became evident in that more extensive use of mines and obstacles is required than ever before. Instructions on how to coordinate and employ a combined arms team with its associated supportive units is mandatory if large threat ratios are encountered. Using a trained OPFOR unit demanded a greater effort and hence better performance in almost every job task required of US players. Both field exercises did point up the need for further intensive research on counter-OPFOR tactics. During ARMVAL, certain experimental tactics were used and evaluated, but the results are not known to the authors.

Attitudinally, personnel reacted very positively to the challenge of "testing their metal" against a realistic "enemy." Seventy (92%) of the 77 US players reported that they felt it would increase or greatly increase their US skills if they would regularly maneuver against an OPFOR unit. Sixty-three (82%) felt it would increase or greatly increase their interest in training if an OPFOR unit was used. Sixty-two (80%) felt that maneuvering against an OPFOR unit helped them understand OPFOR tactics. In most cases, the use of an OPFOR unit was felt to be of benefit to the US players. It should also be noted that some of the players' positive attitudes may be attributed to the use of engagement simulation. There is considerable evidence that engagement simulation produces marked increases in positive attitudes toward training.

A common factor in both events (ARMVAL and 194th FTX), use of realistic hit/miss systems, helped reduce the complacency and smugness that can at times arise from subjective judgments made by commanders about how well tasks are done. This system, in combination with the added stress generated by the OPFOR, drove home the need for improved performance. During the ARMVAL evaluation, an eye-safe laser system (DFS/RMS-2) was used, while the 194th used the REALTRAIN method. The use of the laser system provided a real measure of firing performance under field combat simulation. Each weapons system crew began to realize what it meant to select a fighting position using correct cover and concealment. A common response in this study was that troops thought they had positioned themselves correctly, but to their surprise were receiving hits. There now was a realistic measurement for performance, something which was not normally available for field exercises before. The use of the laser system also enabled measurement of how well a unit or weapons system used the terrain to protect itself during tactical movements and intensified awareness of the criticality of various tasks. Finally, the use of the hit/miss system provided a means of measuring how far a weapon could shoot and what it could hit. The troops learned their own, as well as OPFOR, weapon capabilities and limitations, which lent added realism in conjunction with the OPFOR to the field exercises.

IMPACT OF PLAYING ROLE OF OPFOR ON US SOLDIERS

OPFOR players initially viewed the OPFOR training as being very different from their regular training. This was due, in large part, to the differences in tactical employment between US and OPFOR units. It should be noted that most units rarely train using engagement simulation equipment and methodology. This probably accounts for some of the perceptions concerning differences from regular training. Troops found that in playing OPFOR they were much more controlled in what they could and could not do. Once the combat formations were learned, operating at faster speeds and in greater vehicular density, the OPFOR actions became routine, verging on monotony, especially at the crewmember level. Much of the monotony, however, is attributed to the experimental environment at ARMVAL. To meet necessary test requirements, the same tactical scenarios were repeated over and over. Some loss of motivation on the part of the OPFOR players was experienced because test constraints reduced maneuver freedom, and careful adherence to basic Soviet tactical doctrine was enforced.

In spite of the comments about the sameness of OPFOR tactics, there was general consensus that playing the OPFOR role better prepared them for combat with units using OPFOR tactics (88%, n = 59) and that there was an overall positive benefit from OPFOR

training (77%, n = 36). Most felt that OPFOR training would benefit every service-member (83%, n = 39).

The special training involved with learning to be an OPFOR player provided no difficulty to about half of the personnel (51%, n = 24) and only some difficulty for most of the rest (44%, n = 21). The major problem with the latter group was related primarily to the speed necessary to perform the tasks.

OPFOR training was not viewed by most of the OPFOR players as having the potential of interfering with their knowledge of US tactics (62%, n = 29); a few were unsure (9%, n = 4) and some thought it would (25%, n = 12).

There was divided opinion on the issue of whether OPFOR tactics takes too much time to learn; some felt it did (20%, n = 14), some felt it did not (38%, n = 18) and some were unsure (28%, n = 13). The type of job assigned within the ARMVAL test accounts for a number of the negative or uncertain responses throughout, since some of the roles required little or no active participation in the "fighting." For example, the AMTRACKs simply provided filler for the scenarios and hence their crews were less than enthusiastic after weeks of repetition.

TRAINING IMPLICATIONS FOR US UNITS GOING THROUGH THE NATIONAL TRAINING CENTER (NTC)

Although the conditions which existed during ARMVAL and 194th FTX are not identical to those proposed at the NTC, general parallels do exist.

US units that have not trained against an effective OPFOR in home station training will have difficulty at the NTC if the OPFOR portrays with fidelity the speed and force ratio of a Soviet force. (If EW, smoke and artillery are simulated, initial US force performance will be even more degraded.) At ARMVAL, units reported that it took at least four to five iterations to gain sufficient composure to handle the OPFOR assault.

The learning experience at the NTC would be enhanced if a phased or staged training program were used. Commanders of the maneuver units (OPFOR and US) at ARMVAL recommended that each successive phase of the training should add another component of the tactics and weapons used by the OPFOR, e.g., mass, speed, EW, smoke, and artillery. This will permit a gradual acclimatization to the increased distractions and accelerated response rates. To further increase the potential for learning, after action reviews must be given to the unit during training and include both pre- and post-mission assistance.

TRAINING IMPLICATIONS FOR PERSONNEL PORTRAYING THE OPFOR AT THE NTC

US forces at ARMVAL reported a persistent disbelief in the authenticity of the Soviet tactics being used. To US personnel, the command and control appeared rigid and the tactics foolhardy. This reaction is not unique to ARMVAL. Other tests such as

TASVAL had great difficulty in controlling the fidelity with which the US unit portrayed Soviet tactics. The NTC will confront similar tendencies unless continuing education for the OPFOR personnel, particularly the officers, about the Soviet military system is programmed.

Keeping up morale at ARMVAL among the enlisted personnel was a challenge. Repetition after repetition took its toll. Boredom was inevitable. A similar malaise may overtake the NTC players. Employing two OPFOR units alternately with collateral training was suggested by some officers at ARMVAL.

Several additional points made by OPFOR personnel at ARMVAL are worth noting.

- A training area of 5 to 10 square miles is needed to learn the combat formations.
- Attention must be called to the effective use of the Soviet weapons systems if maximum training value for US troops is to be achieved.
- Maintaining control of the moving formation was one of the more difficult tasks.

TRAINING IMPLICATIONS FOR HOME STATION TRAINING

The following is a list of training activities which ARMVAL participants identified as being most important to consider in preparation for the NTC. The list is not intended to be exhaustive but only a reflection of what seemed critical to these personnel who maneuvered against a realistically played OPFOR.

- Emphasize the actual capabilities (real range and lethality) of Soviet systems.
- Training must emphasize the capabilities and limitations for a given piece of terrain.
- Training should also stress US vulnerabilities.
- Selection and occupation of fighting positions training must be in a field environment.
- Detailed analysis of each battle position is required. An intervisibility study of the terrain must be conducted.
- Estimates range between four to eight weeks of intensive training before effective maneuvering is possible against an OPFOR unit.
- Basic battle drill (company) took two to three weeks.
- Disengagement ranges need to be emphasized due to OPFOR speed.

- Walk-through exercise as well as blackboard drill are important.
- Reaction times must be faster from the first contact with OPFOR.

OVERALL REQUIREMENTS FOR AN EFFECTIVE OPFOR TRAINING PROGRAM

It would appear from this data that the most serious inadequacy lies with the US lack of developed basic skills, not with the tactics of the Soviets. Speed, force ratio, EW, and smoke, for example, are factors in Soviet tactics easily identified. However, they are conditions that can be mitigated or overcome. In reality, they are only the beginning and represent but a superficial look at what the Soviets do. After US forces learn to handle these, then attention will turn to other aspects of the Soviets, e.g., unconventional warfare, airborne drops, a mechanized infantry attack over rough terrain, use of close helicopter support, night fighting, etc.

Any long term training program should include these and many more. To date, the speed and force ratio have been given considerable attention. Development of training objectives for training against the Soviets or any other potential adversary should not be based only on a few factors. Hence, one of the more important requirements in the evolution of a program is to increase the active participation of the trainer in an area that has been dominated by military intelligence interests. Only then will a comprehensive effort be mounted to translate important knowledge unearthed by military intelligence into training documents that contain critical information required by a variety of combat and combat support MOSs. Facts about the threat brought to this level will increase our ability to fight effectively against a potential enemy force.

IMPLICATIONS FOR MANAGING THE NTC

If the NTC is to be maximally effective for its intended purpose of training, management must take care to dispel the notion that the NTC experience will be a typical ARTEP. As reported by Smith,¹ and discussed in Chapter 1, commanders feel that the ARTEP is a test of the battalion and its commander, the results of which may have a profound effect on the commander's future. If this notion continues to prevail with regard to the NTC, strong and vocal opposition to the Center can undoubtedly be anticipated. At best, commanders can be expected to apply pressure on Center authorities to "water down" the effectiveness of the OPFOR to allow friendly forces to make a better showing. At worst, they could be expected to seek every opportunity to fault the Center and bring it into disrepute.

¹N. D. Smith. State of the art: OPFOR and ARTEP implementation in the US Army (Research Problem Review 78-25). Alexandria, Virginia: US Army Research Institute for the Behavioral and Social Sciences, November 1978.

To avoid these pressures and criticisms, Center authorities must stress the training aspect of the exercises and play down any evaluations. Evaluations must be designed only to help the commander prepare his unit, and not to jeopardize his career. NTC authorities must also resist pressures to degrade the effectiveness of the OPFOR. The participants in ARMVAL "lost" the initial encounters when faced by a realistic threat that gave no quarter. Had the OPFOR been held back, less would have been learned, and the validity of the test results would have been highly questionable. To prepare our forces to meet a threat employing Soviet tactics, we must be more concerned about training and less concerned about grading.

Fite² presented these same arguments in a discussion of Marine training needs. One of his strongest arguments is that "the battlefield is not the ideal place to learn high-risk operational methods." He further states that:

We must allow some units, particularly battalions and below, an opportunity to conduct free-play exercises to test tactics and abilities without a scorecard....We need new leaders with the courage to seek new ways to defeat the enemy....We should allow subordinates to fail in a good try....Some of the leaders may consistently do very badly; better we find out now than later.³
(Underlining added by present authors.)

Interviews with the 194th Armor Brigade and ARMVAL personnel substantiate Fite's comment that "...we need to be quick to win." Fite also recommends that "our schools should trim their courses of excessive attention to ourselves and begin to teach Marines about the enemy....The more we know of our enemy the better will be our chances for success."⁴

To summarize, the OPFOR portrayal at NTC must be as realistic as possible. Otherwise, our forces will not learn either their own or their potential adversary's strengths and weaknesses or have the opportunity to develop means of winning outnumbered. To provide an "enemy" which does not exist would be counterproductive. However, it is imperative that the Center remain a training center, and not an instrument for making or breaking careers. It is known that, in reality, any such exercise is a "test" in the sense that a superior commander of a unit undergoing the training evaluates his subordinates, with or without objective data. There is always a "scorecard," be it formal or informal. The issue is whether the NTC experience becomes a formal evaluation or a training evaluation. It is just a matter of where the line is drawn. If the NTC is to become a training experience, then this is not the place to draw the line. Somewhere and sometime a commander must meet the test, and most commanders relish the challenge if given the opportunity to train and be prepared to meet the challenge.

²W. C. Fite. Some lessons learned from the Israelis. Marine Corps Gazette, September 1980, 32-38.

³Ibid., p 36.

⁴Ibid.

ARMVAL WRAPUP (TEST DIRECTOR'S EXPERIENCE, INSIGHTS, THOUGHTS)

Background

The Test Director of ARMVAL, COL R. H. Thompson, has given the authors permission to excerpt from letters he has written to the Office of the Under Secretary of Defense, Research and Development, and the Commandant of the Marine Corps, in which he summarized his personal observations, insights, and conclusions concerning the ARMVAL exercise. This correspondence was brought to our attention by COL Thompson as part of the review of our document we had requested of him. The experiences of COL Thompson are relevant to this report because they provide important information which cannot be ignored in assuming the importance of the use of OPFOR in a maneuver environment and its effect on US troop behavior.

Throughout this report, one of the principal recurrent findings was the problem that even trained US troops had with the direct high speed type tactics portrayed so well by the OPFOR. But there are some who question whether, in fact, the Threat would or could actually maneuver in such a way. Hence, they believe that training our troops to effectively combat these tactics is not worthwhile. Below are some of the Test Director's thoughts concerning the Threat combat system he expressed in his letter to BG Eugene Fox, Office of the Under Secretary of Defense, Research and Development:

The threat combat system is simple, straightforward, and brutal....It is a "meat ax" approach to offensive combat with little concern for finesse or casualties for that matter. His intent is to blast through the main battle area (if he is not able to bypass it) and quickly get into his opponent's rear area.

Like many of the participants who were interviewed, COL Thompson admitted that before the ARMVAL field experiment, he had some misgivings about the inflexibility of the Threat. These feelings were changed as a direct result of what he observed. He writes:

The Threat doctrine is so simple that it is often stereotyped as the "dumb enemy." Some find Threat doctrine difficult to accept. Using the "rational man" test, the feeling is that no one in his right mind would be so inflexible and unconcerned about casualty taking. The belief is that regardless of doctrine, in reality the Threat will adapt to battlefield conditions by employing a "smart system" such as ours....I believe that one of the real strengths of the Threat system is its simplicity and to be simple a combat system cannot be overly flexible. It is simple enough that it can be perfected with a minimum of training.

At one time or another, the question is raised of how long it takes US troops to learn how to operate as an OPFOR. Many individuals in the Army have expressed a reluctance to expend training time learning OPFOR over their own US job training. COL Thompson writes:

The ARMVAL Threat force learned to operate the system effectively with a few weeks of intensive training even though the force was a task organized mixture of Marines and soldiers led by a young 1st Lieutenant with less than 3 years service. Yet, the Lieutenant was able to flawlessly control and maneuver up to 30 armored vehicles, in high speed attacks using only one radio net....Threat commanders are taught a set of battle drills and predetermined battlefield alternatives that allow them to relentlessly press the attack without having to delay to modify plans. The system is further enhanced by the combat power redundancy mass provides....Another strength of the Threat offensive system is its extremely rapid closure rates.

One of the things which impacted most on US troop behavior was the speeds at which the OPFOR maneuvered. The tempo at which job tasks had to be performed increased dramatically, forcing US Forces to operate with fewer errors at ever increasing speeds. COL Thompson's thoughts on this aspect are:

Another strength of the Threat offensive system is its extremely rapid closure rates. This is generally recognized in terms of creating shock action. Less recognized, but more important, rapid movement reduces exposure time. Threat mass combined with rapid closure rates not only presents the defender with a vast target array to deal with, but precious little time with which to do it. For example, a main battle area force can expect a Threat armor/mech force to close the 4,000 meters forward of his FEBA in 20-25 minutes. This provides little time to destroy a Threat force employed in a narrow sector for a main blow....There is little redundancy built into our system. Consequently, every member of the combined arms team must contribute to the maximum and the total effort must be orchestrated to perfection....The time pressure element of dealing with the Threat is emphasized....Aside from not having time to service the numbers of targets presented, it means that there can be no duplication of effort. That is, a single Threat target cannot be engaged by more than one of our own weapons systems. In other words, perfect fire planning and execution are required (underlining added by present authors).

One of COL Thompson's topics dealt with the adequacy of US training programs to prepare combined arms units to meet the Threat. During the course of ARMVAL, an unexpected operational deficiency concerning our training was uncovered. Below are his thoughts on this subject:

If there was one area where my staff and I felt confident that ample, detailed test preparation had been conducted, it was in the training of the test forces....Yet, as we were to discover, this training was woefully inadequate and required considerable remedial effort.

COL Thompson's comments are directed toward the importance of proper tactical training of our combined arms force. He goes on to say:

Our friendly force, in spite of what we thought were our best training efforts, had never been afforded an adequate opportunity to operate against a well-trained threat force. Also, they had never operated with the benefit of an objective feedback system (battlefield instrumentation) that exposed their performance to an unbiased critical review. Actions that were assumed to suffice on earlier maneuver/field tests were found to be inadequate and insufficient. Only through the use of an objective feedback system...did we find our friendly force preparatory tactical training to be sorely lacking. And this training was on a par with - or better than - that experienced by Joint Test Directorate personnel in their prior Marine Corps and Army tactical units!....It is clear to me that our training falls woefully short of preparing units for successful combined arms operations against Threat....We learned in ARMVAL that our combat system can defeat the Threat when the system is properly executed.

The second letter was written by COL Thompson to GEN Barrow, Commandant of the Marine Corps. In this letter, COL Thompson was requested to comment on Marine Corps antiarmor capabilities based on ARMVAL experience and insights. The subject matter is concerned mainly with the tactical implications as revealed by the ARMVAL experience. The ARI/HumRRO research was concerned with those changes, if any, in US troop behavior brought about by Threat operations. Some of these changes are discussed by COL Thompson and presented as follows:

...with the Threat's doctrine of mass and rapid closure, action in the Security Area is now more critical than in the past....We must accept the premise that on occasion we are going to have to fight the Threat, in numbers, to the rear of the Main Battle Area. That dimension of the battlefield also takes on added importance....But in fighting Threat forces, with their speed and numerically superior forces, Marines in the Main Battle Area are going to require much more help up front than before.

Interviews from both the RED THRUST and ARMVAL field exercises indicated that US job performance had to be accomplished with more rapidity and accuracy than ever before, if we are to counter Threat tactics. Time became a crucial element, one not to be wasted. COL Thompson writes this about the element of time:

Dealing with the Threat in the Security Area boils down to one basic, essential problem - time. The Threat understands this perfectly well....His extremely rapid closure rate is designed to reduce opponents' target servicing time as well as to achieve surprise and shock. Before ARMVAL, I don't believe any of us really understood the stopwatch precision with which a defensive system functions to be effective against the Threat.

Our offensive combat experience did not reveal any startling operational insights. We were all deeply impressed with the importance of training. Massing combat power at the precise time and place is the most critical element of the attack. This was by

far the most difficult technique for the ARMVAL Test Force to master. Our attack tactics, by ARMVAL standards, seem to be solid and require no major modification.

Here are some of COL Thompson's comments regarding the benefits of training against a trained OPFOR unit:

I firmly believe that the great equalizer for unfavorable force ratios is proper execution. Proper execution is achievable only through quality training....I felt I had high training standards before the ARMVAL experience. But during ARMVAL, I saw just how proficient a unit can become by interacting with a legitimate Threat force on an instrumented battlefield. At the end of ARMVAL, our Marines were so proficient I was confident they could have defeated any like sized force in the world with very few casualties....Duplicating the ARMVAL experience in our day to day training throughout the Marine Corps would be virtually impossible. But we can incorporate the more essential elements of it by developing legitimate Threat forces for our Marines to operate against, and by procuring an elementary instrumentation system that provides accurate and effective feedback to the troops as to what they are doing right or wrong.

Effective combined arms team training requires continuous interaction with a Threat force. Most of our training energies should be directed toward learning the Threat and how to defeat him....We sorely need to develop battle drills and combat SOP's since the Threat does not give an opponent time to methodically alter plans. We must learn how to maximize every weapons system - fighting outnumbered, not one can be wasted. And there are many others, not the least of which is teaching our leaders how to rapidly develop combined arms battle plans and execute them under pressure of time and a Threat force.

The advantages of the instrumented battlefield are fairly clear. However, I would like to emphasize two that may not be so obvious. One, it forces the commander to manage and fight with residual forces. Secondly, it causes Marines to behave as if survival is important, as they do in actual combat....In my mind I liken the level of combat efficiency required to successfully defeat the Threat to the end of a ten mile road. Our normal training takes us no further than two or three miles down that road. The 29 Palms⁵ experience keeps us moving down that road. But only continuous interaction with a legitimate Threat force and objective evaluation from instrumentation, and the resultant remedial training, will insure reaching the ten mile march.

⁵Twenty-Nine Palms is a Marine field training center.

At almost every level at which the authors interviewed, whether it was participants from the RED THRUST or ARMVAL exercise, the commentaries seemed to be of a like kind. COL Thompson's remarks echoed those same sentiments in a remarkably concise and direct manner. Because of his position as Test Director, he had a unique insight in observing the before and after effects of employing US Forces against a well-trained OPFOR unit. It is hoped that the insights provided by this report will help to confirm in the minds of planners the valuable and effective training that OPFOR provides to US forces.

COL Thompson's overall appraisal of the importance of realistic training involving an OPFOR serves as a capstone on the findings obtained from the participants on both the RED THRUST and ARMVAL exercises. Those who had faced the OPFOR as a viable player in an exercise know the imperative nature of adequate training to defeat him.

REFERENCES

- Fite, W. C. Some lessons learned from the Israelis. Marine Corps Gazette, September 1980, 32-38.
- Harrison, C. E. Lessons learned in fighting outnumbered. Air Defense, April-June 1980, 39-41.
- McCluskey, M. R., Jacobs, T. O., & Cleary, F. K. Systems engineering of training for eight combat MOSs (Technical Report 74-12). Alexandria, Virginia: Human Resources Research Organization, June 1974.
- Raymond, G. E., Jr. Red Thrust. Armor Magazine, 1979, 88(5), 18-19.
- Smith, N. D. State of the art: OPFOR and ARTEP implementation in the US Army (Research Problem Review 78-25). Alexandria, Virginia: US Army Research Institute for the Behavioral and Social Sciences, November 1978.
- Vernon, G. D. Soviet combat operations in World War II. Part I, Lessons for today. Military Review, March 1980, 60(3), 30-40.
- Vernon, G. D. Soviet combat operations in World War II. Part II, Lessons for today. Military Review, April 1980, 60(4), 42-50.
- Warnick, W. L. & Kubala, A. L. Improvement of training realism for tactical units: Opposing Force (OPFOR) program (Final Report FR-MTRD(TX)-80-4). Alexandria, Virginia: Human Resources Research Organization, March 1980. (ARI Technical Report in progress.)
- US Department of the Army. Opposing force (OPFOR) program. Army Regulation 350-2. Washington, DC: HQ, Department of the Army, August 15, 1978.